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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/058,326	01/30/2002	Tetsufumi Tsuzaki	50212-342	6151
20277	7590	03/10/2004	EXAMINER	
MCDERMOTT WILL & EMERY 600 13TH STREET, N.W. WASHINGTON, DC 20005-3096			KIANNI, KAVEH C	
			ART UNIT	PAPER NUMBER
			2877	

DATE MAILED: 03/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/058,326

Applicant(s)

TSUZAKI ET AL.

Examiner

Kevin C Kianni

Art Unit

2877

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☒ Claim(s) 3 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Allowable Subject Matter***

1. Claim 3 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claim 3 is allowable because the prior art of record, taken alone or in combination, fails to disclose or render obvious wherein a value obtained by integrating the absolute value of difference between respective gain spectra of Raman amplification of said selected two Raman amplification optical fibers with respect to wavelength is at least 7.5 dB.nm. in combination with the rest of the limitations of the base claim.

## **Claim Rejections - 35 USC § 103**

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

- This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order

for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grubb et al. (Grubb) (WO 00/49721: PCT/US00/04286).

4. Regarding claim 1, Grubb teaches an optical communication system for transmitting signal light including a plurality of signal channels within a signal wavelength band from a first point to a second point (shown at least in fig. 4; see abstract), said optical communication system comprising: an optical transmission line (see fig. 4, item transmission line connecting various optical couplers 26), including a plurality of Optical fibers (see fig. 4, item fibers such as 30 and 40 of optical transmission device/line 12; see also page 26-30) for transmitting said signal light from said first point to said second point (see abstract), each of said Optical fibers Raman-amplifying said signal light when Raman amplification pumping light is supplied thereto (see page 26-30); and respective pumping light suppliers 32<sub>1-m</sub> and 42<sub>1-m</sub> prepared so as to correspond to said plurality of optical fibers 30/40, each of said pumping light suppliers supplying Raman amplification pumping light to said Optical fiber corresponding thereto (see abstract); wherein two optical fibers selected from said plurality of Optical fibers (see items 20 and 40 optical fibers of optical communication device/line 12 in fig. 4) differ from each other in at least one of the wavelength at which a gain of Raman amplification becomes the highest (see fig. 4, items wavelengths  $\lambda_{p1-pm}$  and  $\lambda_{pe1-i}$  supply accumulative optical gain to optical fibers 30 and 40, respectively, in

which at couplers 26 the Raman amplification becomes highest/cumulative) and the number of channels at which said gain of Raman amplification is maximum (see fig. 4, item optical fibers 30 and 40 coupled to unequal number of channels at couplers 26 in which the Raman amplification becomes maximized/cumulative).

Grubb further teaches wherein the above fiber 30 is of Raman amplification fiber (see page 12, 4<sup>th</sup> parag.) and the above optical 40 is of erbium doped fiber amplifier. However, Grubb does not specifically teach wherein the above optical fiber 40 is a Raman amplification fiber. Nevertheless, Grubb states that his communication system can use different optical fiber types for varying optical gains as desired (see at least page 7, last parag.). Thus, it would have been obvious to a person of ordinary skill in the art when the invention was made to use conventional Raman amplification fiber 30 rather than EDFA type fiber, since such modification would provide increase control over the characteristics of optical signal being transmitted in the system (see page 23, lines 13-18), and since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Regarding claim 2, Grubb further teaches wherein respective pumping light suppliers corresponding to said selected two optical fibers differ from each other in the number of pumping light sources included therein (shown in fig. 4, items 32<sub>1-m</sub> and 42<sub>1-m</sub> corresponding to optical fibers 30 and 40, respectively). With respect to above optical

fibers both of Raman amplification optical fibers, the arguments presented in rejection of claim 1 is analogous in rejection of claim 2.

***Citation of Relevant Prior Art***

5. Prior art made of record and not relied upon is considered pertinent to applicant's disclosure. In accordance with MPEP 707.05 the following references are pertinent in rejection of this application since they provide substantially the same information disclosure as this patent does. These references are:

Islam et al. 6,574,037 teaches claims 1-2

MacCormack et al. 6603896

Ohishi et al. 6417963

These references are cited herein to show the relevance of the apparatus/methods taught within these references as prior art.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to K. Cyrus Kianni whose telephone number is (571) 272-2417.

The examiner can normally be reached on Monday through Friday from 8:30 a.m. to 6:00 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font, can be reached at (571) 272-2415.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**or faxed to:**

(703) 872-9306 (for formal communications intended for entry)

**or:**

Hand delivered responses should be brought to Crystal Plaza 4, 2021 South Clark Place, Arlington, VA., Fourth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application should be directed to the Group Receptionist whose telephone number is (703) 308-0956.

A handwritten signature in black ink, appearing to read 'K. Cyrus Kianni', with a long horizontal flourish extending to the right.

K. Cyrus Kianni  
Patent Examiner  
Group Art Unit 2877

March 1, 2004